

REMARKS

The Office Action dated January 11, 2006 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 4, 9, and 11 have been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added. Support for the claim amendments may be found at least on page 6, lines 22-25 of the specification, for example. Claims 1-11 are currently pending in the application and are respectfully submitted for consideration.

Claim 1 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lu (U.S. Patent No. 5,887,256) in view of Sanjuan (EP 0858235). The Office Action took the position that Lu discloses all of the elements of the claim, with the exception of arranging in the system unallocated telecommunication channels between a base station controller and a base station. The Office Action then cites Sanjuan as allegedly curing these deficiencies in Lu. The rejection is respectfully traversed for the reasons which follow.

Claim 1, upon which claims 2 and 3 are dependent, recites a method of allocating a channel in a mobile system. The method includes arranging, in the system, base stations and telecommunication channels, which are available for a plurality of base stations but not permanently allocated to any base station, between a base station controller and the base stations. The method further includes allocating in call set-up at least one of the telecommunication channels to the base station handling the call, and

controlling the base station controller to transmit information to the base station on the telecommunication channel allocated thereto.

The present invention provides for efficient utilization of telecommunication channels between the base station and the base station controller. Channel allocation may be performed call-specifically in order to improve the degree of utilization of the channels. As such, a given telecommunication channel may only be allocated for the duration of the call to a transceiver unit of the base station handling the call. When the call terminates, the telecommunication channel may be released and it can be freely allocated to another transceiver unit. The same telecommunication channel can thus be allocated call-specifically to various base stations. Thus, a pool of unallocated telecommunication channels is formed between the base stations and the base station controller; from which pool the base station controller allocates a free channel call-specifically to the base station that needs a channel for handling a call at a given time (Specification, page 2, line 34 – page 3, line 11).

As will be discussed below, Lu and Sanjuan fail to disclose or suggest all of the elements of the claims, and therefore fails to provide the advantages and features discussed above.

Lu discloses a method for facilitating cellular communication for a plurality of native cellular handsets in a hybrid cellular communication network which includes a cellular exchange subsystem and a private mobile-services switching center. The cellular exchange subsystem is coupled to a public cellular, and the native cellular handsets are

handsets that subscribe to the hybrid cellular communication network. The hybrid cellular communication network also facilitates cellular communication between a non-native cellular handset and the public cellular network, where the non-native cellular handsets are handsets that do not subscribe to the hybrid cellular communication network. Access request data is received and a cellular exchange subsystem is used to determine whether the access request data originated from a native cellular handset or from a non-native cellular handset. If the access request data originated from a native cellular handset, then data relating to the access request is passed to the private mobile-services switching center for completing a first call path from the native cellular handset. If the access request data originated from a non-native cellular handset, then data relating to the access request data is passed to the public cellular network for completing a second call path between the non-native cellular handset and the public cellular network.

Sanjuan discloses a personal communications network for flexible traffic demand. The network includes a set of base stations that provide coverage for cordless terminals situated in a determined area. The base stations are connected to a certain number of base stations controllers which serve to manage the radio channels available for the network. The physical connections between the base stations and the base station controllers are established dynamically by a link allocation device as a function of the traffic load on each base station and on the degree of occupancy of each base station controller. In this manner, the network resources are allocated as a function of the total traffic demand rather than traffic demands by area.

Applicants respectfully submit that Lu and Sanjuan, whether viewed singly or combined, fail to disclose or suggest all of the elements of claim 1. For example, Lu and Sanjuan do not disclose or suggest “arranging in the system base stations and telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station, between a base station controller and the base stations,” as recited in claim 1. The Office Action acknowledges that Lu does not disclose or suggest this limitation of the claims (Office Action, page 3). The Office Action, however, alleges that Sanjuan discloses this element of the claims. Applicants respectfully disagree.

Sanjuan, like Lu, does not disclose or suggest telecommunication channels that are available for a plurality of base stations but not permanently allocated to any base station, as recited in the claims. Sanjuan merely discloses that the base stations are connected to a certain number of base station controllers which serve to manage the radio channels available in the spectrum allocated to the network in question (Sanjuan, Column 2, lines 23-26). Sanjuan further teaches that the actual connections between the base stations and the base station controllers are made dynamically by means of a link allocation device (Sanjuan, Column 2, lines 27-29). However, Sanjuan does not include any channels between the base stations and base station controller which would be available for a plurality of base stations.

Furthermore, claim 1 recites that one of the telecommunication channels is allocated in call set up. Since Lu, as acknowledged by the Office Action, does not

disclose channels which are available for a plurality of base stations, it cannot possibly disclose allocation in call set up of such telecommunication channels. Additionally, Sanjuan does not disclose or suggest that one of the channels should be allocated in call set up. Instead Sanjuan teaches that the allocation should be carried out according to established occupancy patterns (Sanjuan, Column 4, lines 17-21) which therefore means that the channel allocation is controlled with a clock (see Sanjaun, Column 3, line 45 – Column 4, line 5).

Consequently, the combination of Lu and Sanjuan does not disclose or suggest arranging in the system base stations and telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station and allocating these telecommunication channels in call set-up. Therefore, the combination of Lu and Sanjuan does not disclose or suggest all of the elements of claim 1.

Claim 2 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Sanjuan and further in view of Tiedermann (U.S. Patent No. 5,987,326) and Choi (U.S. Patent No. 6,724,740). The Office Action took the position that Lu and Sanjuan disclose all of the elements of the claim, with the exception of telecommunication channels are classified on the basis of their characteristics into at least two categories, i.e. primary telecommunication channels and secondary telecommunication channels, and in call set-up, a primary telecommunication channel, if available, is allocated to the base station, otherwise a free secondary telecommunication channel is allocated thereto. The

Office Action then relies upon Tiedemann and Choi as allegedly curing this deficiency in Lu. The rejection is respectfully traversed for the reasons which follow.

Lu and Sanjuan are discussed above. Tiedemann discloses a method and apparatus for controlling handoff in a communication system. The communication system provides for independent handoff of the fundamental code channel and supplemental code channels on the forward link. When the supplemental code channel is not in handoff, the supplemental code channels are only transmitted by the base station with the strongest pilot received at the subscriber unit. The Extended Handoff Direction Message, which directs the subscriber unit to the base stations currently transmitting data to it, separately specifies the base stations transmitting the fundamental code channel and supplemental code channels.

Choi discloses a CDMA communication system for transmitting/receiving control information during a voice or data communication service by using a dedicated control channel. The system includes a base station device and a terminal device. The base station device has a forward pilot channel generator for generating a pilot signal, a forward dedicated control channel generator for generating a control message for a forward dedicated control channel, a forward fundamental channel generator for generating a voice signal, and a forward supplemental channel generator for generating packet data. The terminal device includes a reverse dedicated control channel generator for generating a control message for a reverse dedicated control channel, a reverse pilot channel generator for generating a pilot signal by adding a power control signal to the

pilot signal, a reverse fundamental channel generator for generating a voice signal, and a reverse supplemental channel generator for generating packet data.

Applicants note that claim 2 is dependent upon claim 1. As discussed above, Lu and Sanjuan fail to disclose or suggest all of the elements of claim 1. Additionally, Tiedemann and Choi fail to cure the deficiencies in Lu and Sanjuan, since Tiedemann and Choi also fail to disclose or suggest arranging in the system base stations and telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station and allocating these telecommunication channels in call set-up. Thus, Lu, Sanjuan, Tiedemann and Choi, whether taken alone or combined, fail to disclose or suggest all of the elements of claim 2. Furthermore, claim 2 should be allowed for at least its dependence upon claim 1, and for the specific limitations recited therein.

Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Sanjuan and further in view of Tiedemann, Choi and Farias (U.S. Patent No. 4,891,806). The Office Action took the position that Lu, Sanjuan, Tiedemann and Choi disclose all of the elements of the claim, with the exception of the free telecommunication channels being classified into categories on the basis of their data transmission capacity or quality such that the primary telecommunication channels have larger data transmission capacity or they are of better quality than the secondary telecommunication channels. The Office Action then relies upon Farias as allegedly

curing this deficiency in Lu and Tiedemann. The above rejection is respectfully traversed for the reasons which follow.

Lu, Sanjuan, Tiedemann and Choi are discussed above. Farias discloses a method of receiving main and secondary channel data in a data modem. The method includes the steps of receiving a plurality of constellation symbols, determining which of the constellation symbols are associated with a main and secondary channel constellation, processing the main channel constellation symbols according to a method for extracting data from main channel constellation symbols, and processing the secondary channel constellation symbols according to a method for extracting data from secondary channel constellation symbols.

Applicants note that claim 3 is dependent upon claim 1. As discussed above, Lu and Sanjuan fail to disclose or suggest all of the elements of claim 1. Additionally, Tiedemann, Choi and Farias fail to cure the deficiencies in Lu and Sanjuan, since Tiedemann, Choi and Farias also fail to disclose or suggest arranging in the system base stations and telecommunication channels which are available for a plurality of base stations but not permanently allocated to any base station and allocating these telecommunication channels in call set-up. Thus, Lu, Sanjuan, Tiedemann, Choi and Farias, whether taken alone or combined, fail to disclose or suggest all of the elements of claim 3. Furthermore, claim 3 should be allowed for at least its dependence upon claim 1, and for the specific limitations recited therein.

Claims 4 and 7-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Kanai (U.S. Patent No. 6,195,566). The Office Action took the position that Lu discloses all of the elements of the claims, with the exception of the switching means and control means as recited in the claims. The Office Action then relies upon Kanai as allegedly curing this deficiency in Lu. The above rejection is respectfully traversed for the reasons which follow.

Claim 4, upon which claims 5-8 are dependent, recites a mobile system including a base station controller and at least a first and a second base station, which comprise transceiver units for establishing a telecommunication connection by radio signals to the subscriber terminals located in the base station coverage area and switching means for switching the base station transceiver units onto a particular channel of a plurality of optional telecommunication channels between the base station controller and the base stations. The plurality of optional telecommunication channels are available between the base station controller and the base stations, but are not permanently allocated to any base station. The base station controller comprises control means which, in call set-up, allocate at least one of the telecommunication channels to the first or the second base station for the call and which transmit a predetermined message indicating the allocated telecommunication channel to the base station to which the channel is allocated. The switching means of the first, and correspondingly, of the second base station are responsive to the message for switching the base station transceiver units to the telecommunication channel assigned by the message.

Claim 9, upon which claim 10 is dependent, recites a mobile system base station, which includes transceiver units for establishing a telecommunication connection by radio signals to the subscriber terminals located in the coverage area of the base station. The mobile system base station further includes switching means for connecting its transceiver units in call set-up to a base station controller via particular channels of a plurality of optional telecommunication channels which are not permanently allocated to any base station. The switching means are responsive to a message received by the base station in conjunction with the call set-up for switching a particular transceiver unit onto the telecommunication channel indicated by the message for the call.

Claim 11 recites a base station controller. The base station controller includes means for communicating with base stations via a plurality of optional telecommunication channels, which are not permanently allocated to any base station, between the base station controller and the base stations. The base station controller also includes control means which are arranged to allocate, in call set-up, at least one of the telecommunication channels to a base station for a call and which are arranged to transmit a predetermined message indicating the allocated telecommunication channel to the base station to whom the channel is allocated.

As will be discussed below, Lu and Kanai fail to disclose or suggest all of the elements of the claims, and therefore fail to provide the features discussed above.

Lu is discussed above. Kanai discloses a cellular radio communication system utilizing integrated base stations. The system includes a cell containing a first base

station with conventional transceivers and base station facilities, and the antenna of a second base station facility. The first base station facility is made up of a group of base stations facilities where the equipment is integrated, while the second base station is a conventional local base station. A transceiver may have unused capacity and a caller with a low priority may not be assigned to the transceiver even though capacity is available. Instead, the capacity is kept available for a caller with a higher priority. Traffic monitors are used by portable telephone providers to manage the traffic in every cell, and traffic can be assigned to the transceiver based on the provider with the highest volume or according to a prearranged priority scale.

Claim 4 recites, in part, a plurality of optional telecommunication channels, which are not permanently allocated, are available between a base station controller and a first and second base station. Claims 9 and 11 contain similar limitations. As acknowledged in section 3 of the Office Action, Lu does not disclose or suggest this feature of the claims. Additionally, Lu does not disclose or suggest the claimed switching means of the base station, as also acknowledged in the Office Action (Office Action page 7, lines 12-19).

Applicants respectfully submit that Kanai also fails to disclose or suggest that a plurality of optional telecommunication channels are available between a base station controller and at least two base stations, and where such channels are not permanently allocated to any base station. Figure 1 of Kanai illustrates that the border between the base station controller 102 and base station lies between elements 102 and 103. All of

the elements to the right side of element 103 are a part of the integral base station (except for the antenna parts). No optional unallocated telecommunication channels are disclosed in this part of the system. In other words, Kanai does not show any optional unallocated telecommunication channels available between the base station controller 102 and the base station. Therefore, the combination of Lu and Kanai does not disclose or suggest at least this element of claims 4, 9 and 11.

Furthermore, Kanai, like Lu, does not disclose or suggest the claimed switching means for switching the base station transceiver units onto a particular channel between the base station controller and the base stations. The Office Action alleges that element 105 of Kanai corresponds to the switching means of the claimed invention. However, Applicants note that element 105, as illustrated in Fig. 1 of Kanai, is not located between the base station controller and the transceiver units. As such, element 105 of Kanai cannot possibly correspond to the claimed switching means which are recited as connecting the transceiver units in call set-up to the base station controller, as provided in claim 9.

Therefore, for at least the reasons discussed above, Applicants respectfully assert that Lu and Kanai, whether considered alone or in combination, fail to disclose or suggest all of the elements of claims 4, 9, and 11. As such, Applicants respectfully request that the rejection of claims 4, 9, and 11 be withdrawn.

Claims 5-8 and 10 are dependent upon claims 4 and 9, respectively. Accordingly, claims 5-8 and 10 should be allowed for at least their dependence upon claims 4 and 9, and for the specific limitations recited therein.

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Kanai, and further in view of Tiedemann and Choi. The Office Action took the position that Lu and Kanai disclose all of the elements of the claim, with the exception of the telecommunication channels being classified on the basis of their characteristics into at least two categories, that is, into primary telecommunication channels and secondary telecommunication channels and that a primary telecommunication channel, if available, is allocated to the call, otherwise a free, secondary telecommunication channel is allocated thereto. The Office Action then relies upon Tiedemann and Choi as allegedly curing this deficiency in Lu and Kanai. The above rejection is respectfully traversed for the reasons which follow.

Claim 5 is dependent upon claim 4. As discussed above, Lu and Kanai fail to disclose or suggest all of the limitations of claim 4. Furthermore, Tiedemann and Choi fail to cure the deficiencies in Lu and Kanai with respect to claim 4. Thus, the combination of Lu, Kanai, Tiedemann, and Choi fails to disclose or suggest all of the elements of claim 5. Additionally, claim 5 should be allowed for at least its dependence upon claim 4 and for the specific limitations recited therein.

Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Lu in view of Kanai in further view of Farias. The Office Action took the position that Lu and

Kanai disclose all of the elements of claim 6, with the exception of the primary telecommunication channels having larger data transmission capacity or being of better quality than the secondary telecommunication channels. The Office Action then relies upon Farias as allegedly curing this deficiency in Lu and Kanai. The above rejection is respectfully traversed for the following reasons.

Claim 6 is dependent upon claim 4. As discussed above, Lu and Kanai fail to disclose or suggest all of the limitations of claim 4. Furthermore, Farias fails to cure the deficiencies in Lu and Kanai with respect to claim 4. Thus, the combination of Lu, Kanai, and Farias fails to disclose or suggest all of the elements of claim 6. Additionally, claim 6 should be allowed for at least its dependence upon claim 4 and for the specific limitations recited therein.

For at least the reasons discussed above, Applicants respectfully submit that the cited prior art fails to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 1-11 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosures: Petition for Extension of Time